

REMARKS

Claims 1 to 6, 14 to 21 were pending in the above-identified application. Applicant has amended claims 1 and 2.

§ 112 Rejections

The Examiner rejected claims 1 and 2 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner found that claim 1 recites both "a reset line" and "one of the reset lines," and claim 2 also recites "one of the reset lines."

Applicant notes that "a reset line" is provided for each of "a plurality of rows of pixels" recited in claim 1, and therefore a plurality of reset lines is implicitly introduced by that claim language. To improve clarity, Applicant has amended claim 1 to remove the article before "reset lines." Accordingly, Applicant requests the Examiner to withdraw her rejection of claims 1 and 2 under 35 U.S.C. § 112.

§103 Rejections of Claims 1, 3, 5, 6, and 14

The Examiner rejected claims 1, 3, 5, 6, and 14 under 35 U.S.C. 103(a) as being unpatentable over by U.S. Patent No. 6,424,375 ("Fowler") in view of U.S. Patent No. 5,833,871 ("Merrill et al.").

Claim 1

Addressing claim 1, the Examiner stated:

For claim 1, Fowler discloses an image capture system (fig. 1) comprising,

- a plurality of row of pixels (col. 3, lines 22-32)* ...
- a rest line for providing a reset signal (col. 3, lines 22-32; col. 3, lines 55-58; col. 4, lines 20-22 and 31-67);
- a plurality of pixels (col. 3, lines 22-32)* ...
- ...
- a switching device (122) selectively coupled to one of the reset lines in the rows of pixels (col. 3, lines 22-32; col. 4, lines 30-34); ...
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However, Fowler does not expressly teach that the reference voltage source generates a reset voltage that is independent of the supply voltage. In the same field of endeavor, Merrill teaches* that the reference voltage source generates a reset voltage that is independent of the supply voltage (fig. 7, re. 170; col. 11, lines 55-61).

*Note: Fowler incorporates a reference that teaches the plurality of row of pixels and a reset line as claimed above. Please see the cited prior art below.

September 30, 2005 Final Office Action, pp. 4 and 5. Applicant respectfully traverses.

Applicant does not dispute that the system of Fowler includes multiple pixels. However, Applicant submits that Fowler does not disclose or suggest that switch 122 couples a reference voltage source to a reset line for multiple pixels. As can be seen in Fig. 1, switch 122 couples the reference voltage source (consisting of an operational amplifier 106 and a switch 120) only to a reset line of a single photodiode 112.

Fowler also does not disclose or suggest how active pixel sensor 100 of Fig. 1 can be modified so that the reference voltage source is coupled to a reset line for multiple pixels. This is because Fowler discloses that operational amplifier 106 has its inverted input coupled to a readout node 110 of photodiode 112 to provide a feedback path for that particular pixel. It is unclear how the feedback path would be modified to accommodate multiple pixels without deviating from the operating principles of the original invention disclosed in Fowler. Any such modification would not be routine and would be inventive on the part of the Examiner. If the Examiner wishes to continue with this line of argument against claim 1, Applicant requests the Examiner to provide additional details on how active pixel sensor 100 would be modified so that switch 122 would couple the reference voltage source to multiple pixels so that Applicant can properly respond to the rejection.

Applicant does not find Merrill et al. to disclose a reference voltage source that is independent of a supply voltage. The lines of Merrill et al. cited by the Examiner describe Fig. 7 and states:

The drain of the reset transistor 166 is connected to the source of a transistor 168, whose drain is connected to a reference voltage supply V_{ref} (shown at reference numeral 170), and whose gate is connected to a reset control line 172. The gates of the reset transistor 166 and transistor 168 are connected to reset-A and reset-B control lines, 174, and 176, respectively.

Merrill et al., col. 11, lines 55 to 61. These lines do not disclose that reference voltage supply V_{ref} is independent of a supply voltage. If the Examiner wishes to continue with this line of argument against claim 1, Applicant requests the Examiner to provide additional details on how

the cited lines and Fig. 7 of Merrill et al. disclose a reference voltage source generating a reset voltage that is independent of the supply voltage so that Applicant can properly respond to the rejection.

Accordingly, the combination of Fowler and Merrill et al. does not disclose "a switching device selectively coupled to one of reset lines in the rows of pixels; and a reference voltage source coupled between a second ground and one of the reset lines via the switching device, wherein the reference voltage source generates a reset voltage that is independent of the supply voltage" as recited in claim 1.

Claims 3, 5, 6, and 14

Claims 3, 5, 6, and 14 depend from claim 1 and are patentable over the combination of Fowler and Merrill et al. for at least the same reasons as claim 1.

§ 103 Rejections of Claims 15 to 20

The Examiner rejected claims 15 to 20 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,133,862 ("Dhuse et al.") in view of Merrill et al.

Claim 15 recites "a reference voltage that is independent of a supply voltage," which is not disclosed by Merrill et al. as discussed above in regards to claim 1. Claim 15. Accordingly, claim 15 is patentable over the combination of Dhuse et al. and Merrill et al. for at least the same reasons as claim 1.

Claims 16 to 20 depend from claim 15 and are patentable over the combination of Dhuse et al. and Merrill et al. for at least the same reasons as claim 15.

Allowable Subject Matter

Applicant thanks the Examiner for indicating that claims 2, 4, and 21 are allowable if rewritten in independent form including all the limitations of their base claim and any intervening claims.

Applicant has amended claim 2 to independent form as suggested by the Examiner. Thus, claim 2 is in condition for allowance.


Applicant has not amended claims 4 and 21 to independent form but instead Applicant relies on their dependence from their base claim 1 for their patentability.

Notice of References Cited

Applicant notes that while the Examiner cited U.S. Patent No. 6,833,871 issued to Merrill et al. against the present application, the Examiner listed a different U.S. Patent No. 6,476,372 (also issued to Merrill et al.) in the PTO-892. Appropriate correction is respectfully requested.

Summary

In summary, claims 1 to 6, 14 to 21 were pending in the present application. Applicant has amended claims 1 and 2. For the above reasons, Applicant respectfully requests the Examiner to withdraw her claim rejections and allow claims 1 to 6 and 14 to 21. Should the Examiner have any questions, please call the undersigned at (408) 382-0480x206.

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Respectfully submitted,



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